A METHOD OF DETERMINING THE ANGLE OF FLEXION OF THE DISEASED LEG IN HIP DISEASE.

BY GEORGE L. KINGSLEY, A.B., HARVARD MEDICAL SCHOOL.

THE estimation of the amount of flexion of the leg upon the pelvis, in the acute stage of hip-disease, is of much importance as a matter of record and as an indication of the progress of the case. The estimation of this angle is commonly made by the use of the goniometer. As one seldom has this instrument at hand, and as its use is attended with many disadvantages, the following method is offered:

The object of this article is to furnish a ready and accurate method of estimating with a common tape-measure the angle of flexion of the leg, and is intended to be supplementary to the article by Dr. Lovett,[1] on the estimation of adduction and abduction by a similar method. Lay the patient on his back on a table or any flat surface, and then raise the diseased leg by the heel until the lumbar vertebræ touch the table; this

[1] Boston Med. and Surg. Journ., March 8, 1888.

shows that the pelvis is in the normal position and the angle which the leg makes with the table, the angle C A B, is the angle of flexion of the thigh, from the normal position. It is this angle which it is desired to measure. Having placed the child in this position, measure off two feet on the external aspect of the
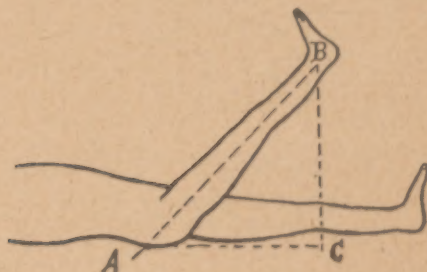
leg with a tape measure with the zero of the tape on the table at (A), and note the point (B), from here measure the perpendicular distance in inches to the table (C), consult Table I and opposite the number of inches found by measuring B C, will be found the number of degrees representing the flexion of the diseased leg from the normal position.

Now we have a right-angled triangle A B C, of which the sides A B (24 inches) and B C (by measurement) are known. $\frac{B C}{A B}$ = sine B A C (the angle of flexion), or B C = A B sine B A C. Therefore, if we compute by this formula a table which shall give the angles corresponding to the various lengths of B C, having measured this perpendicular distance (B C) we can by

glancing down the table until we find the number corresponding to the distance measured, ascertain the number of degrees in the desired angle.

TABLE I.

In.	Deg.	In.	Deg.	In.	Deg.	In.	Deg.
.5	1	6.5	16	12.5	31	18.5	50
1.0	2	7.0	17	13.0	33	19.0	52
1.5	3	7.5	19	13.5	34	19.5	54
2.0	4	8.0	20	14.0	36	20.0	56
2.5	6	8.5	21	14.5	37	20.5	58
3.0	7	9.0	22	15.0	39	21.0	60
3.5	9	9.5	24	15.5	40	21.5	63
4.0	10	10.0	25	16.0	42	22.0	67
4.5	11	10.5	27	16.5	43	22.5	70
5.0	12	11.0	28	17.0	45	23.0	75
5.5	14	11.5	29	17.5	47	23.5	80
6.0	15	12.0	30	18.0	48	24.0	90

If the leg is so short that it is impracticable to measure off twenty-four inches we can measure to a point on the leg distant twelve inches from the table; ascertain the distance to the table in a perpendicular line just as before, double this distance and look in the table as before.